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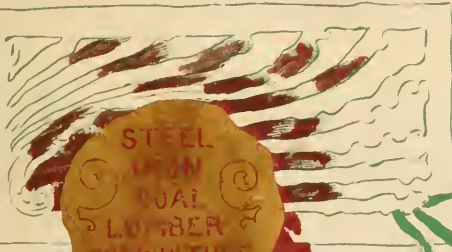
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STEEL
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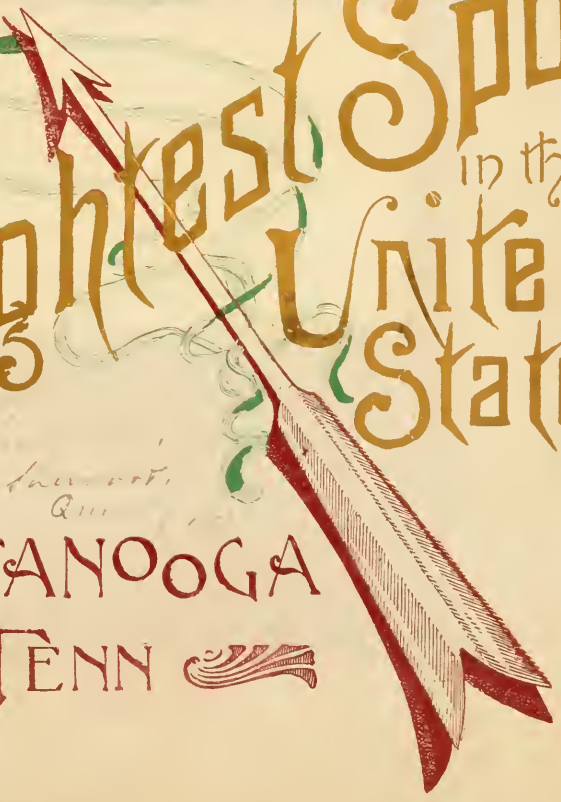


24-301

Brightest Spot in the United States

*See also
Q. 111*

HATTANOOGA
TENN



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A FEW FACTS

WORTH KNOWING ABOUT A CITY
THAT IS GROWING FASTER
THAN ANY OTHER IN
THIS COUNTRY.

Compiled by
CARPENTER, SHERWOOD, QUIMBY & TOWER CO.,
CHATTANOOGA, TENN.

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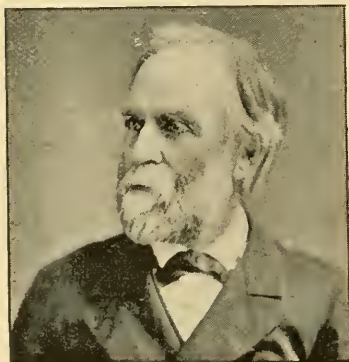
ABRAM S. HEWITT'S PROPHECY.

HON. ABRAM S. HEWITT, ex-Mayor of New York City, said : —

“ It is customary with a great many cities to have a map made especially for advertising purposes, in which their place is represented as being in the centre of the universe, or at least in the centre of the desirable parts of it. I know of no city which would be so nearly justified in issuing such a map as Chattanooga would be, situated as it is at the strategic points where the commercial, industrial and agricultural interests of the South are centred.

“ I know but little of the South except what I have read in books and in speeches, but from what I have seen I cannot conceive of any combination of natural advantages which could by any possibility form a better basis for magnificent growth and prosperity. Situated as it is on a splendid river, which here forms a natural

gateway between the regions of the Central South and of the Gulf States, opening up to you,



are the various treasures with which the South is so richly and generously endowed by the beneficent hand of nature. Add to these resources the immense graineries to the west of you, and no words can foretell the pos-

sibilities of the future. The growth of New York from a town of 21,000 people one hundred years ago to a city of a million and a half has been remarkable, but I predict, after careful study and deliberation of the conditions surrounding it, that there are places now in the South which, one hundred years hence, will surpass the growth of New York in the century that is past, and Chattanooga is more likely to be the point than any city I know of."

ANDREW CARNEGIE'S PROPHECY.

“Who could have prophesied, gentlemen, that in a few years from the time the New South started in earnest as an Iron and Steel manufacturer, that the market of Boston should be controlled by iron shipped from the Southern States; but such is the case to-day; and, gentlemen, if the South has her turn and repays the North for its invasion of the South, let us congratulate ourselves and our Southern friends that the iron with which they invade us is in an infinitely more agreeable shape than that with which we invaded their territory. I delight to dwell upon the progress of the New South in industrial pursuits. It is marvelous. Listen a moment. In 1880 there were but 220 National Banks in all the South; there are to-day 472, with 76 millions of dollars of capital. Since 1880 nearly 21,000 miles of railroad have been added. In 1880 the South made only 390,000 tons of pig iron; last year she gave us 1,132,000 tons, and this year her product will be more than 1,600,000

tons, one-fifth of the entire product of the United States. Only six millions and forty-eight thou-



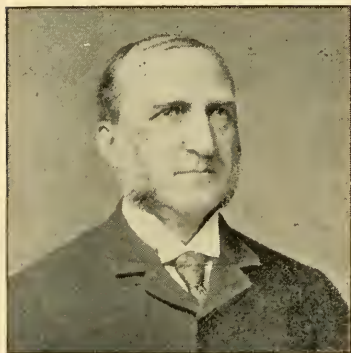
sand tons of coal were mined by her in 1880. Last year her output of these black diamonds exceeded 18,000,000 of tons. In cotton manufacture the record is no less startling. From 667,000 spindles in 1880 we have

2,035,000 eight years later. The new manufacturing and industrial South advances like a giant with his seven-league boots on."

CHAUNCEY M. DEPEW
AT THE
YALE ALUMNI DINNER AT DELMONICO'S, NEW
YORK CITY, FRIDAY, APRIL 18TH, 1890.

The net result of my visit to the South to my mind is just this: that the South is the bonanza of the future. We have developed all the great and sudden opportunities for wealth, or most of them, in our Northwestern States and on the Pacific Slope. But here is a vast country, with the best climate in the world, with conditions of health which are absolutely unparalleled; with vast forests untouched; with enormous veins of coal and iron, which yet have not known anything beyond their original conditions; with soil that, under proper cultivation, for little capital can support a tremendous population; with conditions in the atmosphere for comfortable living summer and winter which exist nowhere else in the country; and that is to be the attraction for

the young men who go out from the farms to seek settlement, and not by immigration from



abroad — for I do think they will go that way—but by the internal immigration from our own country it is to become in time as prosperous as any other section of the country, and as prosperous by a

purely American development.”

INTRODUCTION.

ABOUT forty years ago the bleak prairies of Kansas and Nebraska began to be populated, and the hardy pioneers, in their efforts to wrest a livelihood from unwilling mother earth, suffered great hardships. The climate was severe, the insects destroyed their crops, the winds blew down the rude houses; with little or no shelter or fuel, hardship and peril were the lot of the early settlers. On the maps of that time a large extent of this territory was marked as a desert, upon which no plant could grow or breathing thing could live. In the midst of this barren waste is now the beautiful and prosperous city of Lincoln; while the labor of these pioneers has made such cities as Omaha, Denver and Kansas City necessary. The growth of these cities has been rapid, and has extended through forty years, forming a pleasing picture of American fortitude and enterprise.

There is another scene which is not so thrilling, because no heroism was here to be displayed, no hardships to be encountered; naught but the social and business customs of a chivalric, poetic, dreaming people to be overcome. Upon the South Nature had poured with lavish hand the choicest of her blessings. Here beautiful mountain streams bounded over the rocks, and in merry gladness sang on their way to the more placid rivers, which flowed through fertile valleys to the sea. It was the land of sunshine and of flowers. No bleak winds forced the pioneer to exertion through sense of self-protection; no biting frosts blighted the harvests; no ravenous insects wrested the food from hungry human kind. High above the valleys towered the mountains—not the barren rocks of the Western ranges, but forest-covered summits where the poplar, the walnut, the oak and the pine proudly lifted their heads to greet the rising sun. Here Dame Nature kept her store-house of precious metals, and gold, silver, copper, lead, iron, coal, marble, and whatever else man might need awaited the miner's pick.

Here for years a dreamy, poetic people lived in

easy comfort, unmindful of the wealth that was theirs. The war came; social conditions were changed, and men awakened to the advantages which Nature had given them. Still, the census of 1880 showed that the time was not yet ripe for the South to take on itself a new order of life, and several of the Southern States had actually decreased in population during the decade. A far different tale does the census of 1890 tell. The growth of the South during the past ten years has been phenomenal. We of the South know that this has been accomplished within the last five years, but are content to base the beginning at the year 1880. "Old things have passed away, and all things have become new." The prairie States of Ohio, Indiana and Illinois have increased but little during the past ten years, for southward "the star of empire takes its way," as it did westward forty years ago.

The pivotal city of the South is Chattanooga, which stands *surrounded by the richest coal and mineral deposits in the world*. It is situated where it must control a territory larger and richer than that tributary to any city of the West. From a geographic, economic, social,

sanitary, commercial, historical, industrial or agricultural point of view, it is pre-eminently the leading city of the present South, and properly represents the brightest hopes of the future.

The practical mind turns to figures as the representatives of facts; and in presenting the condition of Denver, Kansas City and Omaha, the magic cities of the West, and their growth from 1880 to 1890, after the section which made them what they are had been rapidly developing for thirty years, it is certainly a conservative proposition that Chattanooga, whose contributing section of country has virtually had but five years' growth, will in the next ten years show as great an increase as the cities of the West have done during the past ten years.

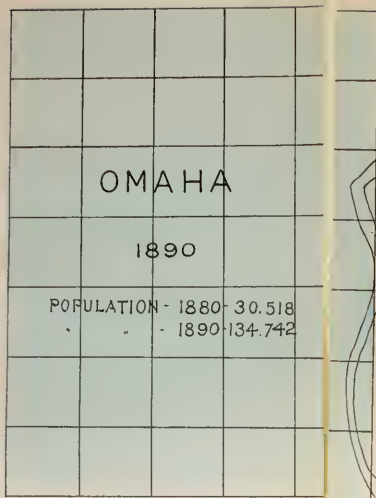
Chattanooga in 1890 has as large and as rapidly increasing commercial territory; it has an agricultural territory which, while not as large in extent, is as fertile as theirs. It has mineral deposits beyond all comparison with any in the West. It has more industrial establishments employing more capital than Omaha has to-day, and double that of any of the three cities above named in 1880. It is, therefore, safe to say that,

with so greatly superior basis of growth, Chattanooga in 1900 will be as large as either of them is now, in 1890.

In this connection it may be stated that the fortunes made in real estate in those cities can be made in Chattanooga now. Values of real estate depend upon the density of population.

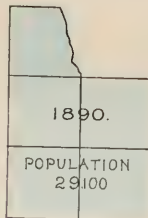
Chattanooga has an area of $4\frac{3}{4}$ square miles, and has 29,000 people. Omaha has an area of over 35 square miles, and in 1880 had 30,000 people. Denver has over 33 square miles, and in 1880 had 35,000 people. The entire territory available for the growth of Chattanooga from the Georgia State line to the river, and from Cameron Hill to Missionary Ridge, is only 19 square miles. Hence, ten years from now, it is very safe to predict, every available foot of ground will be occupied, and in ten more years Chattanooga will be a very densely-built city. There is not room in the basin which it occupies for it to be otherwise. It has not nearly as much available territory to grow in as Omaha or Denver now covers; and there is every possible indication, amounting to an absolute certainty, according to all rules as to the basis of growth, that in 1900 Chattanooga will be larger than those cities are now.

In the accompanying tables are given all the facts bearing upon this, and they show conclusively that every foot of ground within the territory named will be within the city in ten years; and in ten years more real estate values will again double, because, having occupied all the available territory, the density of population will force this result.

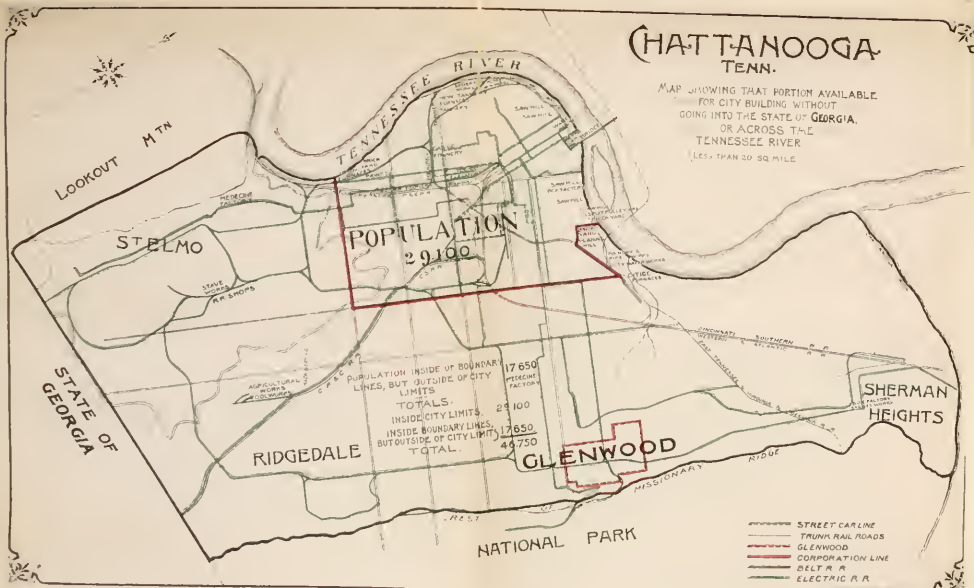


35 SQR. MILES.

CHATTANOOGA.



4 3/4 SQR. MILES.



OMAHA.—CHATTANOOGA.

In the comparison between Omaha and Chattanooga the figures of 1880 for the former city can be only partially used, as they are not all attainable. The growth of a city depends on its commercial and industrial enterprises, and on its available capital. In the number of manufacturing enterprises Chattanooga is now ahead of Omaha, and need not go back to 1880 for a basis of comparison.

	Omaha, 1880.	Chattanooga, 1890.
Population*.....	30,518.....	29,100
School Attendance.....	3,716.....	4,526
Number of Railroads.....	3.....	9
Buildings Erected†	\$1,000,000...	\$1,765,000
Tot. Bus. (estimated) ..	\$45,000,000...	\$60,000,000
Bank Deposits	\$3,373,000...	\$4,465,000
Assessments	\$7,512,683...	\$21,952,506
Manufactures, Number.....	154...	231
“ Capital...\$1,835,800...	\$14,980,000	
“ Employees....1,688...	9,869	
“ Wages....\$726,918...	\$4,200,000	

The following lists for 1890 are prepared from the reports of the Chambers of Commerce for the two cities.

* Population of Omaha, 1890, 145,000.

† Buildings erected in Omaha 1890, \$1,000,000. We do not go back to 1880, but take last year for comparison of Omaha and Chattanooga.

OMAHA.

Class.	Number of Firms.	Number of Employees.	Capital Invested.
Barb Wire	1..	.....	\$150,000
Brick	15..	.....	220,000
Carriages	3..	.....	40,000
Cornice	3..	.....	45,000
Crackers	2..	.....	210,000
Distillers.....	2..	.....	360,000
Extracts.....	2..	.....	14,000
Founders and Machinists	5..	.....	140,000
Linseed Oil	1..	.....	420,500
Mattresses.....	2..	.....	16,000
Overalls.....	2..	.....	27,000
Shot and Lead Pipe.....	1..	.....	90,000
Soda Water.....	3..	.....	40,000
Syrup Retiners.....	1..	.....	25,000
Smelting Works.....	1..	.....	2,500,000
Vinegar Works.....	2..	.....	36,000
Canning and Preserving.	1..	.....	10,000
Baskets	2..	.....	70,000
Brooms	4..	.....	10,000
Soaps.....	3..	.....	70,000
Cigars.....	21..	.....	89,000
Breweries.....	4..	.....	450,000
Candies.....	4..	.....	40,000
Flour Mills.....	3..	.....	140,000
Bag Factory.....	1..	.....	100,000
Total Manufactories....	90..	.....	\$5,312,500

17
CHATTANOOGA.

Class.	Number of Firms.	Capital Invested.	Number of Employees.
Saw Mills	7...	\$825,000 ..	305
Planing Mills	9...	675,000 ..	650
Furnaces	2...	325,000 ..	250
Iron and Steel Works...	3...	6,275,000 ..	1,550
Foundries	12...	562,000 ..	474
Wagons	8...	85,000 ..	70
Ice	5...	426,000 ..	135
Furniture	5...	400,000 ..	375
Brick	9...	175,000 ..	290
Leather	4...	1,091,000 ..	400
Milling	4...	503,000 ..	80
Mattresses & Spring Beds	5...	30,000 ..	35
Novelty Works	10...	150,000 ..	175
Boilers	3...	53,000 ..	75
Agricultural and Wood,			
Miscel's	7...	650,000 ..	560
Stoves and Sheet Iron ..	4...	110,000 ..	225
Sewer Pipe	2...	230,000 ..	275
Patent Medicines	3...	110,000 ..	50
Soap	1...	45,000 ..	25
Cigars	8...	15,000 ..	25
Brewery	2...	150,000 ..	35
Saw Works	2...	25,000 ..	15
Printing	15...	200,000 ..	250
Mining and Quarrying ..	13...	665,000 ..	600
Railroad Shops .....	...	...	800
Blacksmiths and Wheel-			
wrights	32...	130,000 ..	100
Miscellaneous	52...	1,250,000 ..	1,800
(Including Gas, Water and Electric Lights.)			
Stone Works	3...	125,000 ..	250
(Including Steam Marble Works.)			

Total Manufactories...231...\$14,980,000 ..9,869

The excess of capital is due to the large establishments whose business is not confined to Chattanooga, while the number of employees is given for Chattanooga alone.

BANKING CAPITAL.

OMAHA, 1890.

The combined capital of all the banks, including the National, is estimated at four million dollars ; and, including surplus and undivided profits, at over five millions, not counting deposits.

The detailed reports are not fully available.

BANKING CAPITAL.

CHATTANOOGA, 1890.

First National	\$650,000
Third National	354,000
Fourth National	222,000
Chattanooga National	356,000
City Savings	232,000
Citizens' Bank and Trust Company ...	210,000
Chattanooga Savings	55,000
Bank and Trust Company	55,500
Southern Bank and Trust Company ...	50,000
F. R. Pemberton & Company	100,000
People's Bank	200,000
Penny Savings	50,000
South Chattanooga Savings	50,000
Bank of Chattanooga	100,000
Continental	200,000
	<hr/>
	\$2,884,500

The increase in the deposits for the six months from January 1st was \$1,365,000, or nearly fifty per cent. The following figures of increase are from the books of the Chattanooga Savings Bank, and will hold good with the other banks : January 1st (Increased) \$15,802 ; February 1st, \$27,715 ; March 1st, \$34,547 ; April 1st, 38,361 ; May 1st, \$47,736 ; June 1st, \$62,066 ; July 1st, \$64,275 ; August 1st, \$68,895 ; Sept. 1st, \$91,441. These figures are the increase only, and show the prosperous condition of business and the growth of the city better than anything else could. These figures are of Savings deposits alone, no business deposits being received by this bank, which is purely a savings institution.

Real Estate transfers, (1885)	\$4,426,143.
“ “ “ (1889)	\$5,515,425
Local Transn. Lines, (1890).....	97½ Miles

The value of property in Omaha in 1880 was about the same as in Chattanooga in 1890 ; that is, from five to fifty dollars a front foot for residence property, and from one hundred to one thousand dollars per front foot for business property.

In Omaha this price has increased from fifty to five hundred per cent, depending upon locality ; and it will do the same within the next ten years in Chattanooga. Pork and beef packing form the principal industry of Omaha. But this cannot compare with the iron and steel interests of Chattanooga. The growth of Omaha has largely been the result of its jobbing trade, which now reaches the sum of one hundred million dollars annually. But ten years ago it was not heavier than the jobbing trade of Chattanooga is now.

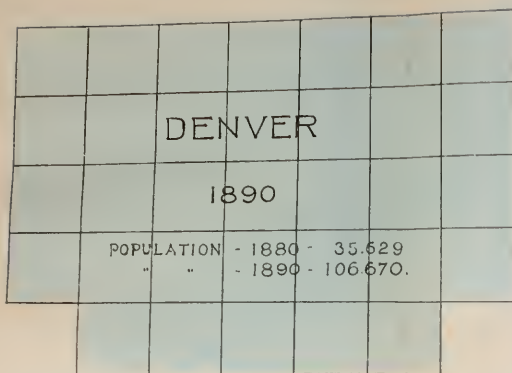
DENVER—CHATTANOOGA.

Chattanooga does not suffer by a comparison with Denver, notwithstanding the rapidity with which the latter city has grown—increasing its population from 35,629 in 1880 to 125,000 in 1890.

	Denver, 1880.	Chattanooga, 1890.
Mf'rs., Number	259	231
Capital	\$2,201,852	\$14,980,000
Employees.. . . .	2,984	9,869
Wages	\$1,514,488	\$4,200,000
Assessments	\$16,194,090	\$21,952,506
Business Firms	875	975
Bank Capital	\$51,646,457	\$2,884,500
Buildings erected	\$1,100,000	1,765,000
Business	\$65,000,000	60,000,000

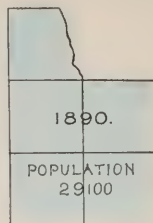
In 1890 Denver employed 9,353 hands in manufactures, with a capital of \$6,282,589.

As to commercial territory, the comparison between these two cities is all in favor of Chattanooga, controlling as it does, the rich cotton and mineral districts of Northern Georgia and Alabama, the magnificent territory of East Tennessee, the grazing and agricultural regions of

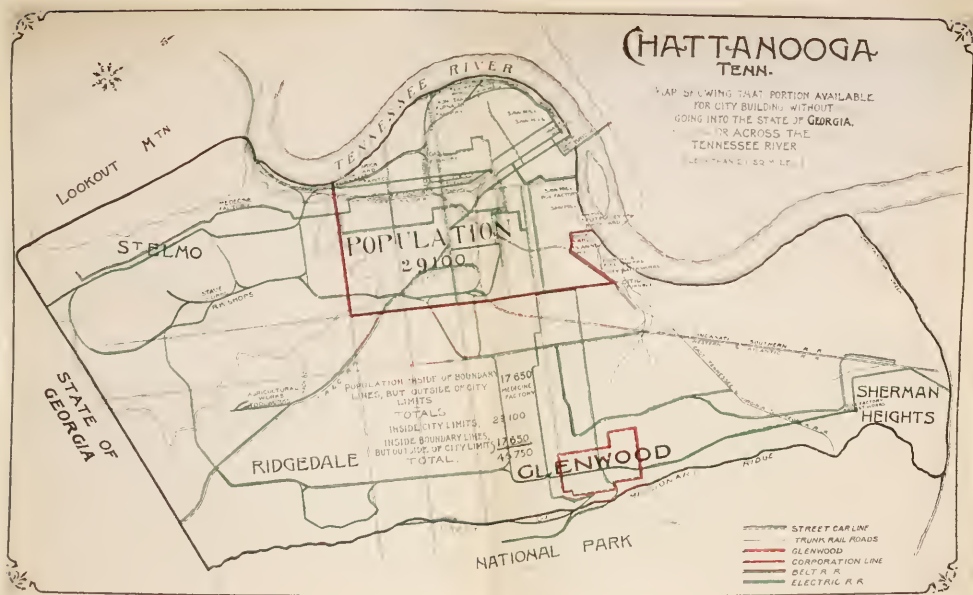


33 SQR MILES.

CHATTANOOGA.



4 3/4 SQR. MILES.



the Sequatchie Valley, and the Cumberland Plateau—altogether a territory with a population of not less than a million and a half of people, embracing nearly one-half of the State of Tennessee, besides large portions of Mississippi, Alabama, Georgia, North Carolina, Virginia and Kentucky. If Denver could grow from 35,000 to 125,000 people in ten years, and then have no more manufacturing and no more banking capital than Chattanooga, then this city, with a better agricultural country and commercial territory to support it, ought to have more than 125,000 people within the next ten years.

KANSAS CITY---CHATTANOOGA.

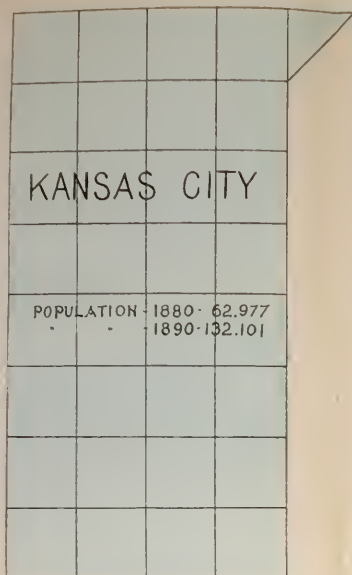
Kansas City is the wonder of the West. In 1880 it was so much larger than Chattanooga is now that it is hard to institute a comparison; but all the figures attainable show conclusively that Chattanooga has a better opportunity for growth than Kansas City had in 1880.

	Kansas City, 1880.	Chattanooga, 1890,
Population	55,785	29,100
Assessments	\$10,577,260	\$21,952,506
Mf'rs., Number	224	231
Capital	\$2,147,305	\$14,980,000
Employees.. . . .	2,548	9,869
Wages	\$1,430,713	\$4,200,000
Total business	\$85,000,000	\$60,000,000

CHATELAIN

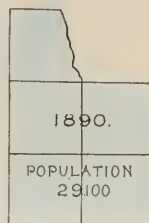


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32 $\frac{16}{100}$ SQ. MILES.

CHATTANOOGA.



4 $\frac{3}{4}$ SQ. MILES.



GLENWOOD.

If, as has been said, the elegance of the homes determines the refinement of the people, then Chattanooga is one of the most refined cities in the United States. Upon every side are costly residences built in the highest style of the architectural art. The most attractive residence portion of the city is Glenwood. Situated at the foot of Missionary Ridge on beautiful rolling ground, nature has done everything to make the spot attractive. It was a park, and the services of an accomplished landscape artist were secured in laying it off. An ideal place for a home, high free from dust, easy of access, yet away from the noise and bustle of the business streets, in full view of the grand panorama presented by Look-out Mountain, Raccoon Mountain, the Palisades, Cameron Hill, Waldens Ridge, the winding Tennessee, and the entire city of Chattanooga itself, it is indeed a charming place. It is no wonder that palatial residence are already proposed in this beautiful park, now for the first time placed upon the market.

A SUMMARY.

It does not require a tongue gifted with the spirit of prophecy to foretell the future of Chattanooga. It is yet upon the threshold of development, but its growth has challenged the wonder and admiration of the entire country. Its present condition and past success have been briefly presented, and this alone would justify a brilliant prediction for the future, but there are other and weighty reasons for expecting the growth to be even more rapid in the years to come than in those gone by.

The city of Omaha claims an actual valuation of \$150,000,000 in property, while Kansas city claims \$250,000,000. These cities were built by Eastern capital, a steady stream of wealth flowing from the East to these magic cities of the West until having grown more rapidly than the country which supports them, they have now become settled and values fixed, affording little or no opportunity for rapid money making. The

attention of Eastern capitalists has therefore been diverted from the West, and they are now looking to the South for opportunities for investment. Until two years ago there was none of this capital in the Chattanooga District, but within the past two years it has commenced to come, as instanced by the Chattanooga Land, Coal, Iron and Railway Co., with \$6,000,000, of Eastern capital, East Chattanooga with \$2,500,000, Kensington with \$1,000,000, Fort Payne with \$2,500,000, Harriman with \$1,500,000, Cardiff, Jasper and other places \$500,000, or about \$13,000,000 within two years. The results of this enormous amount of money have not even begun to be realized for the reason that the properties are not yet developed, and it will take another year before the beneficial effects are very noticeable. The figures given are those of the capitalization of the Companies, and the actual cash will probably be about seven millions of dollars. It can almost be asserted that the whole of the cities of Denver, Omaha and Kansas City are due to Eastern capital, but if one-fourth is attributed to that source we have \$112,500,000, three-fourths of which has gone there within the past ten years.

It is reasonable to believe that with this capital diverted to the South an equal amount will be invested here. There is accumulated in the United States at present over \$270,000 every hour night and day, except Sunday, and this enormous sum of money is seeking investment all the time. A large part of it has gone West in the past. It has to find some other locality, and with the inducements offered in the South a large proportion of it will come here.

The growth of Chattanooga, and the fact that it has only commenced to grow can be seen by a few significant figures. Two years ago there were three flouring mills with a total capacity of 300 barrels a day. There are now three mills with a capacity of 900 barrels and another mill building with a capacity of 600 barrels. In wholesale trade, the grocery and liquor lines were the only ones having exclusive wholesale houses three years ago. There are now eight lines of trade with exclusively wholesale houses, and the jobbing business has been more than trebled. In banking, three years ago there were three banks with a total capital of \$1,000,000. There are now fifteen with three times that much capital.

In manufacturing, steel-making in the South was not dreamed of a few years ago. Now the Southern Iron Co. is manufacturing steel at Chattanooga by the basic process, with \$6,000,000 capital. The effect of this wonderful change can be seen by consulting the Railway statistics, which show that a few years ago there was not a single north and south railroad that was paying satisfactory dividends. Now more miles of railroad are being built north and south than east and west, and the lines in operation are paying better. Traffic has changed from west to east to south to north, and this is more noticeable every year.

An exceedingly favorable fact is that the growth is not confined to the city alone, but is general throughout the territory which it controls.

In manufacturing enterprises and banking capital Chattanooga is far ahead of the three cities of the West in 1880, and holds its own with them even now. It is growing more rapidly than they did then, and it is safe to predict even a greater growth in the future.

The jobbing trade is a sure indication of the

territory controlled by a city, and therefore a valuable index to its future. It is at present the weak point of Chattanooga, and yet it is taking great strides that will soon make it the strong point of the city's growth and prosperity, as it is now of Kansas City, Omaha and Denver.

Ten years ago there was but one exclusively wholesale house in Chattanooga ; five years ago there were but three employing a capital of \$200,000. To-day there are twenty-two employing a capital of \$1,500,000. In addition to these are about forty concerns which do a considerable jobbing trade in connection with a retail business. In these commercial lines alone are considered, and not manufacturing institutions. There are six wholesale grocery houses, three liquor houses, three grocers specialties, two produce, two dry goods, two leather, two hats, two boots and shoes, one drugs and a large wholesale hardware business is done, but the concerns also have retail departments, and are not counted. The same is true of clothing and saddlery goods, and furniture, and one of the dry goods houses is just starting. Within the past twelve months there has been \$335,000 additional capital put into the

jobbing business of Chattanooga, according to the reports of R. G. Dun & Co. Every jobbing house in the city, of whatever line, reports that they are doing all the business that they can handle with their present capital, and could easily double their business if their capital was increased. There is now \$1,500,000 invested in the jobbing trade, and an annual business is reported of \$6,000,000. There is an increase of about forty per cent. in 1890 over the corresponding months of 1889, which shows an increase of twenty-five per cent. over 1888. This showing for a city which was not considered a jobbing point until two or three years ago is a revelation, and indicates that in the future the commercial interests of the city will compare favorably with those of Kansas City, Denver and Omaha. The territory of Chattanooga is practically boundless. Stoves, furniture and plows from here are sold throughout the United States, and even in Mexico, while in the staple lines it has an extensive territory from which to draw its trade.

There is another important matter which will cause the city to grow. It has the best school system that is possible to obtain, it is so healthy

that physicians send their patients here as a health resort, the beauty of its scenery and the soft and genial climate attracts thousands of visitors who seek health and pleasure. It is therefore a most desirable place to live. The class of people who have come is the very best, there being none of the rough element that usually seeks a new country. Wages average the same as in the North, while the cost of living is less. Work is plentiful, and the condition of labor is shown by the fact that strikes are almost unknown, the statistics showing that while the number of persons employed in the South is a little more than one to three as compared with the rest of the country, the number of strikes is but one to twenty-nine. This fact must attract labor and capital alike. No other section combine such advantages of profit, pleasure, comfort and health, and its growth under every possible advantage will surely equal that of the cities of Omaha, Denver and Kansas City under the disadvantages to which they have always been and always will be subjected.

Within the next twelve months there will be three new railroads entering Chattanooga. The

oil fields of the Cumberland Plateau which have been successfully operated for twenty years will be fully developed, several new wells sunk, and the field connected by pipe line with Chattanooga. The copper mines of Polk County will be opened up on a large scale, and copper wire mills established at Chattanooga, new marble quarries and fire brick works four miles from the city will be started, and what is more important than all the Tennessee River will be opened up by means of the Muscle Shoals canal, and pig iron will be shipped by water to Pittsburg and coal to St. Louis. All of these new elements of growth will be added within the next year, and insure a much more rapid increase in wealth and population than has ever been known before.

SOUTHERN STEEL MAKING.

The plant of the Southern Iron Company (Capital \$6,000,000) for making steel at Chattanooga is now nearly completed. The cost will be less than in the North, but owing to the fact that only experimental runs have been made the figures as to cost cannot be given.

Mr. A. M. Shook, General Manager of the Company, and one of the recognized leaders in the iron business of the South, makes the following statement for publication :

“There are four practical methods known whereby to make steel. These are : the Bessemer process, the basic Bessemer, the Acid Open Hearth and the basic open hearth. Our Southern materials are not adapted to the Bessemer or the Acid Open Hearth because our ores have too much phosphorous to make acid steel. With the Basic Open Hearth the percentage of phosphorous is

not material. You must have low sulphur and low silica.

The result of my investigation in Wales and England satisfies me that we can, by the proper mixtures make pig iron in the South that will make open hearth steel that is adapted for all commercial purposes, and for structural work generally. It will be well adapted to rails, but will be of a better quality than is required for rails, and it will probably go into the finer products.

We will construct two open hearth furnaces at Chattanooga, making in the aggregate seventy or eighty tons of steel a day. These will be in connection with the steel rail mill there which the Company owns. We have ores that are practically Bessemer, which we expect to convert into Bessemer Steel to make steel rails, and if so, to use both the Bessemer and Basic processes. The success of the experiment is assured.”*

Capt. H. S. Chamberlain, President of the Roane Iron Co. and Citico Furnace Co. says :

“Mr. Shook and myself went abroad to investigate the operations of the Basic process of steel

(NOTE) Since the above was written the Southern Iron Co. began operations Tuesday, Sept. 16 1890 and are now working night and day.

making, as used in the steel mills with a view to employing the same in the Southern Iron Co's. steel mill here. We were received by the iron masters of the old country most cordially and treated most courteously. We were given every facility for thoroughly investigating the process. We visited all the leading mills of England and a number in Germany, and were gratified to see the absolute success attending the use of the Basic process. We visited the great works of Sir John Brown, and went through the mines of the famous Cleveland iron stone district, and everywhere we went we were offered ample opportunity to investigate the processes employed.

“After making a thorough investigation we were satisfied that our Southern iron could be just as easily and successfully employed in steel making as that of the old country by the basic process.

“The Basic process is the old Siemens-Martin open hearth furnace, the same as used in the acid process, but the furnace is lined with basic material, and all the additions are basic. In this process the phosphorous, the objectionable ingredient in our Southern iron is oxydized and goes

off in the slag, thus leaving the iron pure and ready for carbonizing into steel ; and iron even high in phosphorous can be used to nearly as good advantage as the best Bessemer irons of the North, and at much less original cost. The product is of the finest nature, and much better adapted to the finer grades of steel than is the Bessemer.

“For use in these open hearth Basic furnaces any amount of phosphorous, if low in silicon, can be used. Of course the less amount contained of each of these ingredients the better. In these respects the Southern Iron Company's charcoal product more than meets the requirements, as the iron has less than one-half of one per cent. phosphorous, and less than one per cent. of silicon. With suitable care in manipulation the irons from any of the coke furnaces in the South can be used to advantage, and will, most likely, be so used as the demand for the steel product increases.

“The metal made by this open hearth Basic process is superior to any other for wire rods, tin plate and ship plate and most steel shapes, to the Bessemer.

“I was interested by the fact that the pig iron used by these furnaces in England is white, the grey brands carrying too much silicon. I believe that Southern ores in general are perfectly adapted to making this product, the only drawback to the iron now made at our coke furnaces being the silicon, which I am confident can be eliminated in the blast furnace at no additional cost of production.

“We have all of the basic in and around Chattanooga in the greatest abundance, and that part of the process will be reduced to the minimum cost; Chattanooga is most fortunately situated in this respect; as will be demonstrated when the mill begins active operation.

“The mill will make steel rods, steel plates, and small steel shapes, and it is possible that we will make nails, and if the duty is advanced on tin plate we will make that for the reason that Basic steel is admirably adapted to making tin plate.

“Chattanooga will of course be the centre of operations as here is the most important plant of the Company's property: in other words Chattanooga will be the virtual name of the Southern

Iron Co., for here the output of its furnaces and mines will be utilized, and all its business will be transacted from Chattanooga. All its manufactured products will be known as Chattanooga manufactures, and the most important improvements and additions to their property will be here. Other furnaces will be built at various points on the Company's property, and this, of course, will necessitate the enlargement of the main plant here; so that Chattanooga must be the beneficiary of all the operations of the Company."

L. K. QUIMBY, *Prest.*
E. P. CARPENTER, *V. Prest.*

GEO. R. SHERWOOD, *Secy*
L. H. TOWER, *Treasurer.*

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